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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,113	06/25/2008	Rachel Yerushalmi-Rozen	0-06-165	9526

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EXAMINER

NERANGIS, VICKEY MARIE

ART UNIT	PAPER NUMBER
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1796

MAIL DATE	DELIVERY MODE
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06/03/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/587,113	YERUSHALMI-ROZEN, RACHEL	
	Examiner	Art Unit	
	Vickey Nerangis	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 March 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3-14 and 16-39 is/are pending in the application.
- 4a) Of the above claim(s) 18-39 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-14,16 and 17 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. All outstanding rejections, except for those maintained below, are withdrawn in light of applicant's amendment filed on 3/9/2010.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior office action.
3. The new grounds of rejection set forth below are necessitated by applicant's amendment filed on 3/9/2010. In particular, claim 1 has been amended to limit the concentration of nanotubes to at least 0.5 wt %. Thus, the following action is properly made final.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1, 3-14, 16, and 17 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

With respect to claim 1, the concentration of at least 0.5 wt % fails to satisfy the written description requirement of 35 USC 112, first paragraph since there does not appear to be a written description requirement of the open-ended range in the application as originally filed, *In re Wright*, 866 F.2d 422, 9 USPQ2d 1649 (Fed. Cir. 1989) and MPEP 2163. While there is

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support for a lower endpoint of 0.5 wt % and for a concentration of up to 10 wt %, there is no support for an unbound upper limit like claimed.

With respect to claims 3-14, 16, and 17, they are rejected for being dependent on a rejected claim.

Claim Rejections - 35 USC § 102

5. Claims 1, 3-8, 10-14, 16, and 17 are rejected under 35 U.S.C. 102(e) as being anticipated by Clarke (US 6,878,361).

Clarke discloses a method of producing stable dispersions of single-walled carbon nanotubes by utilizing dispersal agents such as Poloxamer 188 which is a triblock copolymer of polyethylene oxide—polypropylene oxide—polyethylene oxide having molecular weight of 7680-9510 (col. 5, lines 38-40). Clarke teaches that the nanotubes are present in an amount of 0.1-50 mg/mL (0.01-5 wt %), preferably 10 mg/mL (1 wt %) (col. 6, lines 31-35). The dispersal agent is used in an amount of no greater than 500 mg/mL and at least 5 mg/mL. Approximating for sake of calculation that Poloxamer 188 has a density of about 1 g/mL, the amount of block copolymer is 0.5-50 wt % which provides for a mass ratio of block copolymer to carbon nanotube of about 0.5-50. The carbon nanotube are removed from solution by centrifuging (col. 14, lines 28-32).

In light of the above, it is clear that Clarke anticipates the presently cited claims.

Claim Rejections - 35 USC § 103

6. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Clarke (US 6,878,361).

The discussion with respect to Clarke in paragraph 5 above is incorporated here by reference.

Clarke fails to teach that the solution comprising the nanotubes and block copolymer is mixed by sonication.

Even so, Clarke teaches that current methods for purifying and isolating nanotubes include physical disruption of the raw material (nanotubes) utilizing sonication.

Therefore, it would have been obvious to one of ordinary skill in the art to mix and prepare the solution comprising the nanotubes and block copolymer by mixing with sonication in order to facilitate physical disruption of the nanotubes.

Response to Arguments

7. Applicant's arguments filed 3/9/2010 have been fully considered but they are not persuasive. Specifically, applicant argues (A) WO 02/076888 only discloses a concentration of nanotubes of up to 0.35 wt %; (B) that Clarke discloses a broad range of dispersal agents and fails to show any difference among them; and (C) that Clarke fails to exemplify the claimed concentration of nanotubes and relative concentration of block copolymer to carbon nanotube.

With respect to argument (A), while WO 02/076888 discloses only concentrations of carbon nanotubes of up to 0.35 wt %, it is not relevant given that WO 02/076888 fails to disclose a block copolymer dispersal agent like taught by Clarke.

With respect to argument (B), Clarke exemplifies the presently claimed block copolymer dispersant Poloxamer 188 and therefore clearly discloses said block copolymer.

With respect to argument (C), the examiner agrees that the examples include concentrations outside of the claimed range, however, Clarke clearly teaches that the nanotubes are present in an amount of 0.1-50 mg/mL (0.01-5 wt %), preferably 10 mg/mL (1 wt %) (col. 6, lines 31-35) and that the dispersal agent is used in an amount that provides for ratio of 0.5-50. These are ranges that substantially overlap with the claimed ranges. Case law holds that “applicant must look to the whole reference for what it teaches. Applicant cannot merely rely on the examples and argue that the reference did not teach others.” *In re Courtright*, 377 F.2d 647, 153 USPQ 735,739 (CCPA 1967). While WO 02/076888 discloses only concentrations of carbon nanotubes of up to 0.35 wt %, it is not relevant given that WO 02/076888 fails to disclose a block copolymer dispersal agent.

Conclusion

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Vickey Nerangis whose telephone number is (571) 272-2701.

The examiner can normally be reached on Monday - Friday, 8:30 a.m. - 5:00 p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

vn

/Vickey Nerangis/
Primary Examiner, Art Unit 1796